Memorandum of Meeting

DNREC – Air & Waste Management
Air Quality Management Section

Meeting Date: June 6, 2006
Location: DNREC Auditorium, Richardson and Robins Building, Dover, DE
Purpose: Workgroup Meeting #5, Delaware Electric Utilities Multi-Pollutant Regulation Development

The purpose of this workgroup is to establish a committee of interested parties to assist the Department in the development of the regulatory requirements and associated language to facilitate a reduction of sulfur oxides (SOx), nitrogen oxides (NOx), and mercury (Hg) from Delaware's coal and residual oil-fired electric generating units (EGUs). DNREC personnel, other state agencies, persons with environmental interests, persons impacted by power plant emissions, and power plant owners and operators were present at the meeting (please see attendance list following this memo).

This was the fifth in an anticipated series of six or more workgroup meetings. During previous meetings, representatives from the potentially affected electric power generating facilities, representatives of environmental interest groups, and other interested parties have made presentations concerning their perspective of the multi-pollutant regulation. The specific purpose of this meeting was for the Department to briefly summarize the information that had been presented in previous workgroup meetings and to outline the Department's current thoughts about emissions limits that will be addressed in a proposed multi-pollutant regulation.

The meeting was opened and conducted by DNREC's Ron Amirikian.

Delaware Department of Natural Resources and Environmental Regulation (DNREC)

DNREC's presentation was made by Ron Amirikian. The goal of the regulation was restated; to require a significant reduction in air emissions from Delaware's coal and residual oil fired power plants. Reducing emissions from these plants will provide a benefit to public health, safety and welfare by assisting Delaware achieve attainment of ambient air ozone and particulate matter standards, reducing mercury contamination and nitrogen deposition in the Chesapeake Bay and inland bays, reduce acid rain, help achieve regional haze goals, and level the playing field regarding proposed and completed emission standards in neighboring states.

Mr. Amirikian presented data for 2002 which indicated that Delaware's coal and oil-fired electric utilities represent the state's largest non-mobile source of VOC emissions, represented about 55% of the stationary source NOx emissions, 74% of the stationary source SO2 emissions (after accounting for reductions underway at the Premcor facility), and about 77% of mercury emissions (after completion of Occidental Chemical shutdown).

Mr. Amirikian addressed some of the main issues that have been presented in previous meetings:

- Real reductions in current actual emission rates are needed, and future allowable NOx, SO2 and mercury emissions must not be allowed to exceed current levels. Mass emissions must be reduced from current levels.

- Cost of emissions controls should be reasonable when compared to controlling other types of sources, and health costs should be considered. Data indicates that there is a nearly 9:1 economic benefit supporting air pollution reductions.

- The economic viability of individual units should not be a deciding factor in the decision to require emissions reductions. However, if federally enforceable near-term shutdown commitments are made, less stringent interim control measures may be considered.

- Because Delaware is a deregulated state, the impact on future electric rates in Delaware can not be determined.

- A proposed multi-pollutant regulation should focus on appropriate emissions reductions, not provide requirements for unit retirements.

- PJM is responsible for monitoring and ensuring electric grid stability on the Delmarva peninsula and surrounding region. Projects are underway, and more being studied, that will improve the historic north-to-south electric transmission limitations on the peninsula.

- Reasonable emissions reduction targets and timelines should be established, with a phased-in approach to help provide flexibility. Unit's should have technology based emissions limitations, considering the capabilities of retro-fit SCR for NOx control, flue-gas desulfurization for SO2 control, and activated carbon injection for mercury control. Specific technology selection should be left to the source owner/operator.

- The federal CAIR rule was designed to mitigate pollutant transport, not address any local NAAQS or air quality problems, but any multi-pollutant regulation should not interfere with CAIR.

- The federal CAMR rule does not specifically require the reduction of mercury emissions from Delaware units, which is one of the goals of the multi-pollutant regulations.

- Issues such as co-generation, use of landfill gas as a fuel, increases in local resource utilization (such as water), and accounting for zero-emitting generation technologies may need to be considered in a multi-pollutant regulation.

- The issue of direct particulate matter emissions has not been a focus point (but the issue has been somewhat discussed) in the multi-pollutant regulation development to date, but it may appropriate to this forum.

- Presentations from Conectiv and NRG have proposed NOx emissions rates of approximately 0.2 lb/MMBTU with no mass emissions reduction commitments, proposed SO2 emission rates of approximately 0.5 lb/MMBTU with no mass emissions reduction commitments, and proposed mercury reductions as co-benefits from NOx, SO2, and particulate emission reduction technologies supplemented by carbon inject if needed and if feasible.

Mr. Amirikian confirmed the intended approach of the multi-pollutant regulation: the control of NOx, SO2, and mercury emissions from Delaware's coal-fired and residual oil-fired electric generating units with a nameplate capacity of 25MW or greater.

Regarding NOx emissions, the Department is proposing:

- Beginning January 1, 2009 through December 31, 2011, limit NOx emissions at 0.15 lb/MMBTU on a rolling 24-hr basis as monitored by 40 CFR Part 75 CEMS or other approved methodology. Unit averaging within a common facility would be permitted.

- Beginning January 1, 2012 and beyond, limit NOx emissions at 0.125 lb/MMBTU on a rolling 24-hr basis as monitored by 40 CFR Part 75 CEMS or other approved methodology. Unit averaging within a common facility would not be permitted. At this level, NOx emissions are reduced by approximately 60% from 2002 levels.

- These short term emission rate limits ensure all affected units install controls, but do not meet the regulation's goal of ensuring significant mass emissions reduction. Therefore an annual mass emissions cap based on 0.10 lb/MMBTU and 100% capacity factor will be established for each unit. This represents an approximate 75% reduction in allowable NOx emissions.

Regarding SO2 emissions, the Department is proposing:

- For oil-fired units, beginning January 1, 2009, combust fuel oils with sulfur content of 0.5% or less by weight.

- Beginning January 1, 2009 through December 31, 2011, limit SO2 emissions at 0.37 lb/MMBTU on a rolling 24-hr basis as monitored by 40 CFR Part 75 CEMS or other approved methodology. Unit averaging within a common facility would be permitted.

- Beginning January 1, 2012 and beyond, limit SO2 emissions at 0.26 lb/MMBTU on a rolling 24-hr basis as monitored by 40 CFR Part 75 CEMS or other approved methodology. Unit averaging within a common facility would not be permitted. At this level, NOx emissions are reduced by approximately 80% from 2002 levels.

- These short term emission rate limits ensure all affected units install controls, but do not meet the regulation's goal of ensuring significant mass emissions reduction. Therefore an annual mass emissions cap based on 0.18 lb/MMBTU and 100% capacity factor will be established for each unit. This represents an approximate 87% reduction in allowable SO2 emissions.

Regarding mercury emissions, the Department is proposing:

- Beginning January 1, 2009 through December 31, 2012, mercury emissions shall not exceed 1.0 lb/TBTU, or be reduced by a minimum 80% capture, on a quarterly basis.

- Beginning January 1, 2013 and beyond, mercury emissions shall not exceed 0.6 lb/TBTU, or reduced by a minimum of 90% capture, on a quarterly basis.

- Annual mercury mass emissions caps will be established for each coal-fired unit based upon CAMR allocation methodology. No averaging or trading will be permitted.

- Compliance will be demonstrated with mercury emissions rate limits by use of CEMS. Quarterly testing will be required if the % reduction compliance option is chosen.

The Department has estimated that:

- The total capital compliance cost will range from $100 million to $175 million.

- NOx removal cost range is $1200 to $2500 per ton for the coal units and $2400 to $4500 per ton for oil units

- SO2 removal cost range is $200 to $1200 per ton for the coal units and about $7000 per ton for the oil units.

- Generation costs increase approximately 20% for the coal and oil units.

Mr. Amirikian presented a table comparing the DNREC proposed emission rates with those of some neighboring states and the STAPPA/ALAPCO Mercury Model Rule. It can be seen that DNREC's proposed limits are no more stringent than the others.

Mr. Amirikian indicated that DNREC would treat the federal CAIR program as a totally separate requirement. However, he also indicted that DNREC was participating the regional OTC process to determine if reductions in the CAIR NOx and SO2 mass caps were necessary. Mr. Amirikian indicated that Delaware would not participate in the federal CAMR program, but that the multi-pollutant regulation mercury mass caps would satisfy Delaware's obligation to that program. Mr. Amirikian indicated that further discussion were necessary to address regional haze and direct PM2.5 emissions, and asked workgroup members to submit any comments they may have. It was stated that the regional greenhouse gas initiative (RGGI) and CO2 emissions will be addressed under a separate regulation at a later date.

One or two additional workgroup meetings are anticipated to discuss the treatment of particulate matter and the details of the multi-pollutant regulation language. Date, time, and location of the meeting(s) will be e-mailed to the workgroup.

The Department is anticipating holding public workshop/information sessions on the proposed regulation in late July/August 2006. The intent will be to have a proposed regulation published in the September 1, 2006 Delaware Register with Public Hearing by the end of September. The intended effective date of the regulation is November 11, 2006 with compliance deadlines in January 2009/2012.

Following the presentation, Mr. Amirikian asked for any questions or comments.

Mr. Muller of Green Delaware expressed a concern that the landfill gas combustion credit issues in the proposal could provide incentive to increase landfilling in order to increase the amount of gas generated. He indicated that he would need to consider this further, and urged caution in this area. Mr. Muller indicated he felt the proposal did not provide sufficiently stringent emissions limits. Mr. Muller stated that it was his opinion the related federal program were inadequate and forced the states to go out on their own to address these significant air pollution problems.

Mr. Amirikian closed the meeting, thanking everyone for their participation.

The DNREC slide presentation may be viewed on the DNREC Electric Generating Unit (EGU) Multi-Pollutant Regulation website: http://www.awm.delaware.gov/Info/Regs/AQMMultiPReg.htm

June 6, 2006 Meeting Attendance (Sign-In) List

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